Mathematics

Practice Test Paper 1

(Chapter 6: Triangles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Give reasons for geometrical statements where required. Use of calculators is not allowed.

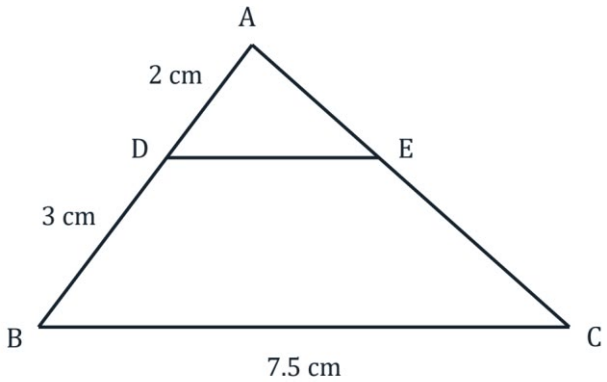
SECTION A

(5 questions × 1 mark = 5 marks)

1. Which statement is always true for congruent figures?

(A) They have different shapes.
(B) Their areas must differ.
(C) They are similar.
(D) Their sizes must differ.

2. In the diagram, DE ∥ BC. What is the length of DE?



(A) 2.5 cm
(B) 3 cm
(C) 4.5 cm
(D) 5 cm

3. If △ABC ~ △PQR, which angle corresponds to ∠B?

(A) ∠P
(B) ∠Q
(C) ∠R
(D) ∠A

4. Two triangles have corresponding side ratios 3 : 4, 3 : 4 and 3 : 4. Which criterion establishes similarity?

(A) AA
(B) SAS
(C) RHS
(D) SSS

5. Two similar triangles have perimeters 24 cm and 40 cm. What is the smaller-to-larger side ratio?

(A) 3 : 5 (B) 5 : 3

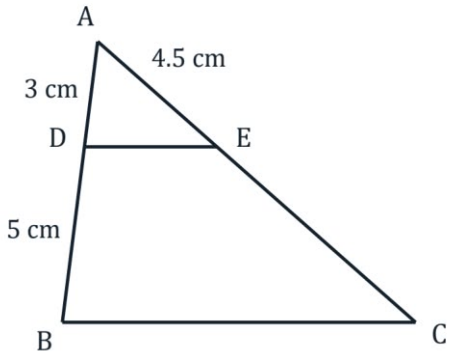
(C) 9 : 25 (D) 2 : 5

SECTION B

(4 questions × 2 marks = 8 marks)

6. Give one pair of similar figures of different sizes and one pair of non-similar rectangles. Explain briefly.

7. DE ∥ BC in the diagram. Find EC and hence AC.



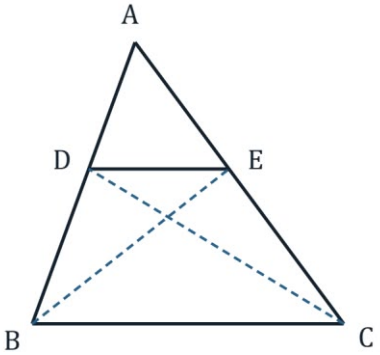
8. Triangles ABC and DEF have AB = 6 cm, BC = 8 cm, CA = 10 cm and DE = 9 cm, EF = 12 cm, FD = 15 cm. Establish their similarity.

9. A 1.5 m stick casts a 2 m shadow. At the same time, a tree casts a 12 m shadow on level ground. Find the tree's height.

SECTION C

(3 questions × 3 marks = 9 marks)

10. In the diagram, DE ∥ BC. Using areas of triangles, prove the Basic Proportionality Theorem.



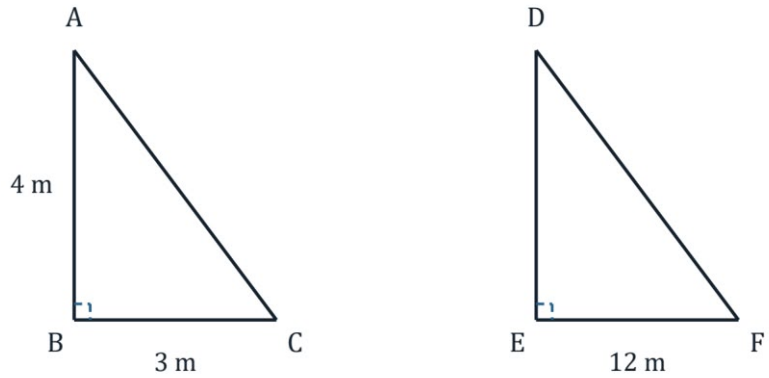
11. In △PQR, S lies on PQ and T on PR, with ST ∥ QR. If PS = x + 2, SQ = x − 1, PT = 8 and TR = 4, find x and PQ. All lengths are in centimetres.

12. $\triangle ABC \sim \triangle DEF$. Their perimeters are 42 cm and 63 cm. If AB = 10 cm and EF = 21 cm, find DE and BC, explaining the ratio used.

SECTION D

(Application Based Question - 3 marks)

13. A vertical post AB and a vertical tree DE cast shadows BC and EF at the same time on level ground. Use the measurements in the diagram.



(i) State a similarity criterion for $\triangle ABC$ and $\triangle DEF$.

(ii) Find the height of the tree.

(iii) At the same Sun elevation, what height would cast a 15 m shadow?